# Tennessee Pollution Prevention Partnership Success Story

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# Elimination Of Air Leaks Reduces Energy Demand

## The Member

Tennessee Koyo Steering Systems Co. (TKS) has been in operation at their Monroe County Vonore, TN site since 1989. The facility of 345,000 sq ft and 800 employees is located on property adjoining Lake Tellico. Currently the facility produces over 8,000 rack and pinion steering systems per day for domestic and international original equipment auto manufacturers. A just-in-time supplier strategically located to their customers, Tennessee Koyo ships numerous times per day via common carriers on milk run routes. Tennessee Koyo is ISO 14000 certified and has a very positive attitude toward environmental management and protecting the environment. Tennessee Koyo is committed to complying with environmental laws, regulations, and other requirements and to continually improving their environmental performance. This was reflected in 2004 with four state awards and one national award form Keep America Beautiful.


## The Story

The TN Koyo Vonore facility is over fifteen years old and has grown very rapidly over that time. Given the growth, it has been operating at or near capacity and was experiencing numerous air leaks with the process equipment. Many of the processes require heavy machining and air chucks are utilized extensively in these applications. Pneumatic actuators and air cylinders are commonplace in the assembly and test areas. The facility environmental management team, health & safety, and facilities engineering worked together to institute a preventative maintenance program to identify, repair, and maintain a zero air leak policy for the equipment. In addition to the energy waste, air leaks lower equipment efficiency and the more excessive leaks contribute to overall plant noise thus adding to the need for hearing protection in many areas. To demonstrate management's commitment, two maintenance technicians were dedicated to the "identify and repair" air leak program. The technicians were provided state of art ultrasonic air leak detectors and charged to find and repair all leaks no matter how minute.

## The Success

Throughout 2003 at a slightly lower production level than current, TN Koyo was using 875 hp/hr to supply the facility with air. In the initial stages of the "identify and repair" program, the major air leaks were addressed first and the facility began to see immediate results.

## The Pollution Prevented

The project started in March 2004 and was completed in November 2004. The facility is now operating with 600 hp/hr air compressor demand as opposed to the earlier 875 hp/hr yielding a net savings of 275 hp/hr. Additionally on weekends and lighter production shifts, only 300 hp/hr is required to provide air for the facility. It is anticipated that the energy savings recognized from this project will amount to $37,000 annually, not including the incidentals from maintenance and noise reduction.

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